REMARKS

Applicant appreciates the detailed examination evidenced by the Final Office Action mailed April 2, 2007 (hereinafter "Final Action"). In response thereto, Applicant respectfully requests entry of the amendments in which Claims 1-5 and 10 are amended, Claims 6 and 7 are canceled and new Claims 28-30 are added. Claims 1-5, 10, 11 and 28-30 are presently pending in the application. Applicant respectfully submits that all claims are in condition for allowance for at least the reasons stated below.

35 U.S.C. §112, second paragraph rejection

The Final Action rejects Claim 7 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Final Action, page 2. Applicant respectfully submits that Claim 7 is canceled and therefore the rejection is moot.

Claim 1 is patentable over Yokoyama

The Final Action states that Claim 1 is rejected under 35 U.S.C. §102 as being anticipated by U.S. Patent No. 6,703,715 to Yokoyama ("Yokoyama"). Final Action, page 2. Applicant respectfully traverses the rejection on the basis that Yokoyama does not disclose or suggest all of the recitations of Claim 1, as amended. For example, Claim 1 recites:

> An integrated circuit device comprising:
> a conductive contact in a hole in an interlevel dielectric layer;
> a first spacer having a first dielectric constant on a side wall of the hole;
> a second spacer having a second dielectric constant located between the first spacer and the side wall of the hole, wherein the first dielectric constant is less than the second dielectric constant; and
> a contact pad in a substrate, wherein the conductive contact contacts the contact pad, ***wherein the first spacer extends along the side wall to contact the contact pad and wherein the second spacer does not contact the contact pad.***

(*Emphasis added.*) Applicant respectfully submits that Claim 1, as amended, includes recitations corresponding to dependent Claims 6 and 7, as originally filed. Applicant further submits that the amendment does not constitute an admission as to the allowability of Claim 1, but is merely provided to advance prosecution. In rejecting

Claim 6, the Final Action states that Yokoyama discloses "a contact pad (20a) in a substrate, wherein the conductive plug/contact (32) contacts the contact pad." Final Action, pages 3-4. In this regard, Applicant respectfully submits that none of the layers described or illustrated in Yokoyama contact the contact pad (20a) identified in the Final Action. For example, the plug 32 appears to be the only structure that protrudes through the gate insulation film 12 to contact the contact plug 20a. Since none of the layers contact the contact pad (20a), Yokoyama necessarily does not disclose or suggest wherein the first spacer extends along the side wall to contact the contact pad, as recited in Claim 1.

Additionally, Yokohama appears to describe a spacer insulation film 24 and a lower spacer insulation film 26. However, the spacer insulation film 24 is formed of a silicon nitride and the lower spacer insulation film 26 is formed of a silicon oxynitride film, which has a dielectric that is lower than silicon nitride film. Yokohama, column 6, line 42 and column 7, lines 6-9. In this regard, Yokohama's stacking order of spacer insulation film 24 and lower spacer insulation film 26 is the reverse of the structure recited in Claim 1. Applicant acknowledges that, absent other structure, a difference in stacking order between Yokohama and the recitations of Claim 1 to not necessarily result in a change in the parasitic capacitance between a gate structure and a contact plug. However, when the contact pad, which may have a seam, is arranged under the contact plug, the reverse stacking order described in Yokohama may increase contact resistance and thus the parasitic capacitance between the contact pad and conductive line pattern.

In contrast with Yokohama, and consistent with a device as recited in Claim 1, a relatively low dielectric material can be buried in a seam of the contact pad thus improving the parasitic capacitance between the contact pad in the conductive line pattern. Accordingly, Claim 1, as amended, is patentable over Yokoyama for at least these reasons.

Claim 1, as amended, is patentable over Park

The Final Action states that Claim 1 is rejected under 35 U.S.C. §102 as being anticipated by Park et al. ("Park"). Final Action, page 5. Although the Final Action

does not provide any basis for the rejection of Claim 1 in view of Park, the Office Action mailed October 20, 2006 stated that Park discloses:

> a conductive contact (38) in a hole in an interlevel dielectric layer (26a),
> a first spacer (24) having a first dielectric constant on a side wall of the conductive contact; and
> a second spacer (34) having a second dielectric constant that is less than the first dielectric constant located between the first spacer and the side wall of the conductive contact.

(Office Action, page 6.) Applicant respectfully submits that Park does not disclose or suggest all recitations of Claim 1, as amended. For example, as identified in the Office Action, the second spacer (34) in Park does not disclose "a contact pad in a substrate, wherein the conductive contact contacts the contact pad, ***wherein the first spacer extends along the side wall to contact the contact pad and wherein the second spacer does not contact the contact pad,***" as recited in Claim 1. Accordingly, Claim 1 is patentable over Park for at least these reasons.

Claim 10 is patentable over Park

The Office Action states that Claim 10 is rejected under 35 U.S.C. §102 as being anticipated by Park. Office Action, page 6. Applicant respectfully traverses the rejection on the basis that Park does not disclose or suggest all of the recitations of Claim 10. The Office Action states that Park discloses all of recitations of Claim 10, which recites:

> An integrated circuit device comprising:
> an integrated circuit substrate in which source/drain regions are formed;
> a first interlevel dielectric layer which is formed on the integrated circuit substrate;
> gate line patterns which are formed in the first interlevel dielectric layer;
> contact pads which are present between adjacent gate line patterns in the first interlevel dielectric layer and electrically connected to the source/drain regions;
> a second interlevel dielectric layer which is formed on the first interlevel dielectric layer, wherein contact holes, through which the contact pads are exposed, are formed in the second interlevel dielectric layer;

> first contact spacers which are formed along the side walls of the contact holes, the first contact spacers being formed of silicon oxide;
>
> second contact spacers which are formed of silicon nitride and formed on the first contact spacers; and
>
> contact plugs which are present in the contact holes between the second contact spacers.

This interpretation of Park is erroneous. It appears, based on the significant distinctions between Claim 10 and Park and the lack of response to Applicant's previously submitted remarks, that the Final Action merely copies the previous rejection without further analysis in view of Applicant's previously submitted remarks. As a general matter, the devices that Park discusses, such as in Figure 7, are so distinctive from devices as recited in Claim 10, that no valid construction of Park can disclose or suggest the recitations of Claim 10. For example, if, as the Office Action states, the insulating layer 12a reads on the first interlevel dielectric layer, then the contact pads 10a in Park are not ***in the first interlevel dielectric layer***, as recited in Claim 10. *See, e.g.*, Figure 7. Moreover, the contact pads 10a discussed in Park are in a layer below the bit line patterns 22 and thus are not ***between adjacent gate line patterns***, as recited in Claim 10. *See, e.g.*, Figure 7.

Further, Park discusses that the upper interlayer insulating layer 26 is formed on the capping insulating layer 24 and not the first interlevel dielectric layer, as recited in Claim 10. Column 5, lines 29-31. Applicant respectfully submits that for at least these reasons, Park does not disclose or suggest the recitations of Claim 10. Accordingly, Claim 10 is patentable over Park for at least these reasons.

Dependent claims are patentable

Applicant respectfully submits that dependent Claims 2-5, 11 and 28-30 are patentable at least per the patentability of the independent claims from which they depend. For example, regarding Claim 2, the Office Action states that Yokoyama discloses "wherein the first spacer comprises silicon nitride and the second spacer comprises silicon oxide." Office Action, page 3. The Office Action further includes a footnote that "[i]nterpreting the claim broadly, silicon oxynitride (SiON) is comprised of silicon oxide. Office Action, page 3. Applicant respectfully disagrees. One of ordinary skill in the art will appreciate that silicon oxynitride is not a "silicon oxide." Specifically, SiON is a specific compound having specific properties based on the composition that includes nitrogen. One of ordinary skill in the art

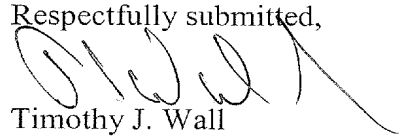
would not consider that SiON is merely a silicon oxide to which a nitrogen is added. Thus, silicon oxide is distinctive from and not a component of SiON, as the Office Action alleges. For at least these reasons, Yokoyama does not disclose or suggest the recitations of dependent Claim 2.

Additionally, Applicant submits that various other ones of the dependent claims are separately patentable and, for the sake of brevity in this communication, will reserve the right to present such arguments in future communications if necessary.

CONCLUSION

As all of the claims are now in condition for allowance, Applicants respectfully request allowance of the claims and passing of the application to issue in due course. Applicants urge the Examiner to contact Applicants' undersigned representative at (919) 854-1400 to resolve any remaining formal issues.

Respectfully submitted,



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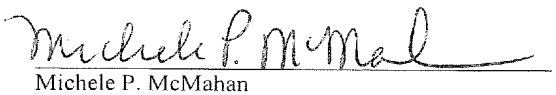

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Date of Signature: July 2, 2007